

CLAIMS:

What is claimed is:

1. A sidewall for a plant container, comprising:
a substantially water-impermeable root-tip-trapping region; and
a porous air-root-pruning region adjacent the root-tip-trapping region.
2. The sidewall of claim 1, wherein the root-tip-trapping region is colinear with the air-root-pruning region.
3. The sidewall of claim 1, wherein the root-tip-trapping region comprises a porous fabric layer bonded to a layer of a root-impenetrable material.
4. The sidewall of claim 1, wherein the root-tip-trapping region is a contiguous upper portion of the sidewall and the air-root-pruning region is a contiguous lower portion of the sidewall.
5. The sidewall of claim 1, wherein the root-tip-trapping region comprises between 1/2 and 9/10 of the sidewall.
6. The sidewall of claim 1, wherein the root-tip-trapping region comprises between 2/3 and 3/4 of the sidewall.
7. The sidewall of claim 1, wherein the sidewall is flexible, rigid, or a combination thereof.
8. The sidewall of claim 1, wherein the root-tip-trapping and air-root-pruning regions form a bendable sheet.
9. The sidewall of claim 1, wherein the air-root-pruning region includes protuberances having outwardly extending distal ends that are open.

10. The sidewall of claim 1, wherein the root-tip-trapping region includes protuberances having outwardly extending distal ends that are closed to trap roots.
11. The sidewall of claim 1, wherein the edge of the sidewall is secured by a method selected from sewing, gluing, plastic welding, hooking, rivoting, screwing, bolting, bonding, and combinations thereof.
12. The sidewall of claim 3, wherein the root-impenetrable material is water-impermeable.
13. The sidewall of claim 1, wherein the root-tip-trapping region comprises greater than 10 root-tip-trapping elements per square inch.
14. The sidewall of claim 3, wherein the porous fabric has a weight between 2 and 10 ounces per square yard.
15. The sidewall of claim 3, wherein the porous fabric has a weight between 4 and 6 ounces per square yard.
16. The sidewall of claim 3, wherein the porous fabric has openings between 1/16 and 1/4 inch.
17. The sidewall of claim 3, wherein the porous fabric is a spun bonded, needle punched fabric.
18. The sidewall of claim 3, wherein the porous fabric is selected from polyester, polypropylene or other olefin fiber.
19. The sidewall of claim 3, wherein the porous fabric is a woven or knitted fabric.
20. The sidewall of claim 3, wherein the porous fabric is degradable.

21. The sidewall of claim 3, wherein the porous fabric is cotton.
22. The sidewall of claim 3, wherein the porous fabric is opaque.
23. The sidewall of claim 22, wherein the porous fabric is black or gray.
24. The sidewall of claim 3, wherein the porous fabric is bonded onto the root-impenetrable material by a method selected from gluing, laminating and combinations thereof.
25. The sidewall of claim 3, wherein the root-impenetrable material is reflective.
26. The sidewall of claim 3, wherein the root-impenetrable material is a polymer sheet.
27. The sidewall of claim 3, wherein the root-impenetrable material is selected from polyethylene and polypropylene.
28. The sidewall of claim 3, wherein the root-impenetrable material is metal.
29. The sidewall of claim 3, wherein the root-impenetrable material is a metal foil.
30. The sidewall of claim 22, wherein the root-impenetrable layer is pervious to UV radiation.
31. The sidewall of claim 3, wherein the root-impenetrable material is white.
32. The sidewall of claim 3, wherein the root-impenetrable layer has a thickness between 2 and 10 mils.
33. The sidewall of claim 3, wherein the root-impenetrable layer has a thickness between 3 and 5 mils.

34. The sidewall of claim 3, wherein the root-impenetrable material is biodegradable.
35. The sidewall of claim 34, wherein the biodegradable material is selected from wood, fiber, starch, polyhydroxyalkanoates, polycaprolactone, polylactide aliphatic copolymer, polylactide, aliphatic polyester, an aliphatic-aromatic copolymer, and combinations thereof.
36. The sidewall of claim 1, wherein the regions are configured in a pattern selected from rows, columns, dots, checkerboard, and combinations thereof.
37. The sidewall of claim 1, wherein the sidewall is an integral part of a container.
38. The sidewall of claim 1, wherein the sidewall is a discrete panel that can form a container.
39. The sidewall of claim 1, wherein there are two or more root-tip-trapping regions.
40. The sidewall of claim 1, wherein there are two or more air-root-pruning regions.
41. A container formed by bending and securing opposed edges of one or more sidewall panels together, wherein the sidewall comprises a substantially water-impermeable root-tip-trapping region and a porous air-root-pruning region adjacent the root-tip-trapping region.
42. The container of claim 41, wherein the root-tip-trapping region is a contiguous upper portion of the sidewall and the air-root-pruning region is a contiguous lower portion of the sidewall, and wherein the root-tip-trapping region comprises between 1/2 and 9/10 of the sidewall.
43. The container of claim 41, wherein the root-tip-trapping region comprises a root-impenetrable sheet bonded to a porous fabric having openings with a diameter between 1/16 and 1/4 inch.

44. The container of claim 43, wherein the root-impenetrable material is selected from polyethylene and polypropylene.
45. The sidewall of claim 43, wherein the porous fabric is a spun bonded, needle punched fabric.
46. A sidewall for a plant container, comprising:
a water permeable, porous fabric layer and a water impermeable, root-impenetrable layer bonded to a portion of the outer face of the fabric layer.
47. The apparatus of claim 46, wherein the porous fabric is a spun bonded, needle punched fabric.
48. The apparatus of claim 47, wherein the fabric has a density between 2 and 10 ounces per square yard.
49. The apparatus of claim 46, wherein the root-impenetrable layer comprises polyethylene and the porous fabric comprises spun bonded fabric.
50. The apparatus of claim 49, wherein the polyethylene has a thickness between 2 and 10 mils.
51. A method of growing a plant in a pot comprising the steps of:
air-pruning roots of the plant in a lower sidewall portion of the pot; and
trapping root tips of the plant in an upper sidewall portion of the pot.
52. The method of claim 51, further comprising:
preventing water loss through the upper sidewall portion of the pot.

53. The method of claim 52, further comprising:
draining excess water out of the pot through the lower sidewall portion of the pot.
54. The method of claim 53, further comprising:
providing oxygen to the roots through the lower sidewall portion of the pot.
55. A plant container, comprising:
a water permeable, porous fabric layer; and
a water impermeable polymer layer stretch-wrapped around a portion of the outer face of
the fabric layer.
56. The apparatus of claim 46, wherein the porous fabric is a spun bonded, needle punched
fabric.
57. The apparatus of claim 47, wherein the fabric has a density between 2 and 10 ounces per
square yard.
58. The apparatus of claim 46, wherein the root-impenetrable layer comprises polyethylene
and the porous fabric comprises spun bonded fabric.
59. The apparatus of claim 49, wherein the polyethylene has a thickness between 2 and 10
mils.
- 1.126 60
60. A method of preparing a growth environment for a plant, comprising:
disposing growth medium in a container having a water permeable, porous fabric
sidewall; and
stretch-wrapping the upper $\frac{1}{2}$ to $\frac{9}{10}$ of the sidewall with a water conserving polymer
film.
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61. The method of claim 50, wherein the polymer film is selected from polyethylene,
polypropylene, polybutylene, and polyvinylchloride.

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1.1/24 52. The method of claim 51, wherein the porous fabric is spun bonded, needle punched fabric.